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Newsletter

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LAPTOPS IN FORUM

Lapdogma

Lotus Positions

Laurels

Lookouts

Japan's Largest IBM-Standard Personal Computer Users Group

Tokyo PC Newsletter

Since 1984

Central P.O. Box 1145, Tokyo 100-91, Japan
TPC BBS 24 hours/day
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(03) 3997-3444

Information hotline for prospective members: (03) 5706-0057

The club meeting is held on the first Thursday of each month at the Tokyo Union Church between Omote-Sando Station and Harajuku Station, starting from 7 p.m.

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Sez the Prez

The "high tech" Gulf war this month has brought technology to the fore everywhere. But I'm not sure how well the 20th century's "advanced" technology is satisfying anyone's needs — on the war front or in the home. The Patriots are doing their job with considerable success — at a million dollars a shot — but their performance often leaves room for improvement. With so many billions spent by both sides, why does it still feel so much like medieval warfare?

On a personal level, I'm seriously suffering from a month of FEN overdose, and from straining in front of my Japanese TV to pick up English speakers' comments, which are all but drowned out by the Japanese interpretation. High tech isn't really all that high.

But advances HAVE been made. Many moons ago, my first job as a programmer was a mailing list project, using machine language. It took me more than a month. Today I could do the job with *DBase* or *Paradox* in less than an hour.

Another example. My first PC was an Osborne, the world's first "portable" — 22 pounds — computer. With 64K and two 90K disk drives, it was a steal at $2,400. And it was fast! This was less than 10 years ago. I still remember Roger Boisvert's presentation in which he graphically outlined the incredible progress of hardware and software, and where it seems to be going.

In spite of the stunning developments we see today in hardware and software, true "user-friendliness" is still more of a dream than a reality; witness the gusto with which participants at last month's meeting hit the special interest tables. *(Don't miss Marty Davidson's meeting report in this issue).* User groups continue to provide a valuable technical support network on all levels. Until the PC becomes as easy to use as the telephone, TPC and other users groups will continue to be a necessary and important part of the PC scene.

-SW

Disk O' the Month

TPC005-JK contains five programs. These are *Chop V3.1, EverGlades, Magazine Article Library V1.0, Memory Lane V1.9, and PageMe V1.0.* As usual, they have been fully tested and are totally virus-free. *Chop, Everglades, MAL, and Memory Lane* are all self-extracting .ZIP files, which means that when you run them they expand their contents onto your disk. (Make sure that you have plenty of room.)

CHOP31.EXE: *CHOP* has a rather self-evident purpose: to chop files up. Let's say that you have two computers: a rather old, decrepit XT with 360K drives and a 20MB HD that your secretary uses, and a 33Mhz 486 with every drive, hard and floppy, known to mankind, and an 8514/A that you use to play *Tetris.* You have written a massive document on your screamer that takes up 596K, and will only LZH or ZIP down to 430K. You need to get it to the Obaterian XT in the corner. How?

Now, you could upload to a local BBS, and then download it on the XT. But what if the Obaterian doesn't have a COM port? Even if it did, do you really want to spend 860K in phone bills? Instead, you whip out your trusty Disk Of the Month from under the table leg it's been keeping balanced all the while, and bring out *CHOP.* You then *CHOP* the file into two parts or more, put each part on a 360K floppy, bring them over to the XT and reassemble. It's the computer equivalent to sawing someone in half for easier shipping.

EVERGLAD.EXE doesn't really need much of a description. It's a HyperText poem, one of the the most original purposes for Hypertext I've found. The only other that comes close is Pinnacle Software's *LoveFire.*

MAL10.EXE worried me for a minute when I first looked at it. "Mal" is French for "evil". In this case, "*MAL*" stands for "Magazine Article Library." I have a database in *PC-File* of about 500 magazine articles, all laboriously typed in one summer. It contains the name, author, subject, magazine number and issue for a large amount of computer magazines, but MAL would have saved me a lot of time thinking about design of the database.

Cont'd on next page

FEBRUARY MEETING REPORT

Is it only in February that the TPC holds its SIG festival, in which users throng around tables of their own choosing to babble and fume with "authorities" (otherwise sensible folk who either comprehend more than their listeners on the subject at hand, or comprehend it in a more emphatic tone of voice)? It's almost impossible to come away from one of these too infrequent get-togethers knowing less than one knew beforehand (unlike at the formal presentations)—and often it's the SIG leaders who learn the most: They didn't know they were experts.

Program Director Stuart Woodward lined up commanders for carefully picked Special Interest Groups: Windows; Desktop Publishing; Programming Languages; Communications; Hardware; Dos Basics; Databases; Word Processing; and Virus Prevention. Round tables were set up and each became encircled with at least a few attenders, along with the usual hovering know-it-alls who wandered from SIG to SIG learning nothing.

The Communications SIG was among the most popular—it was more like two groups speaking in different tongues. At one end such cognoscenti as Patrick Hochner dissected the dissimilarities between 33-bis protocol and 42-unbis, and remarked on how MNP5 can untangle the transfer flow at speeds greater than a mile a minute, while at the other end of the table Ed Zawlocki's sub-SIG concerned itself with such mundane matters as how to connect the modem to the phone line and what number to dial for CompuServe. Next year this group should be broken into two (the litmus test being CompuServe proficiency).

The chummy Programming Languages SIG bantered about whether beginners ought to start out learning Pascal or skip that part and go directly to C, or even C++. The DOS Basics SIG was maybe even larger than the Communications one, and even more serious and befuddled-looking. Why Copy when you can Xcopy? Windows Groupies at another table struggled over Enhanced Mode matters and "why can't I run (fill-in-the-blanks)"?

At the Database SIG, a pair of enterprising gentlemen from Borland Japan appeared—on invitation from a member—to describe their two-year labor (not yet finished) of developing a Japanese language version Paradox for NEC computers. Borland fans took the opportunity to describe problems they were having obtaining upgrades from Borland Japan. A whole new user-friendly upgrade plan was offered. It pays to attend these meetings.

Joseph Kaye's suspicious-loooking gang talked about computer viruses (and how to avoid them?), while the Hardware SIG wrangled (as always) over SCSI and ESDI and how many hard disks can be balanced on the head of a controller. Computing is becoming complicated. No wonder February seems like the shortest month.

-MD

Disk O' the Month

Cont'd from previous page

MEMLAN19, Memory Lane, may bring back memories of Beatles' songs for some. However, this is the IBM PC Users Group, not Apple, so no chance. *Memory Lane* is basically a PIM (Personal Information Manager), one of those catchphrases that really irritates me. *Memory Lane* is a TSR, a word that might bring tears to some eyes, but it's worth it. I personally don't have that much use for it — my Personal Information consists of PhonePro, a notebook, and a rather tatty school calendar covered in "Date Due"s for homework assignments. However, if you have a high-powered job, or if you like to look professional, being able to pop up in the middle of *PC-Wrong, WordImperfect,* or *WhyWrite* could be very useful.

Finally, *PAGEME10. PageMe* is contained in a separate subdirectory, PAGEME10. You connect *PageMe* to the same phone line as your answerphone. When an incoming message has been recorded, it calls a number you have input — where you can be reached, or a paging service, which would page you in turn. Very nice.

Well, that's this Disk Of the Month. Next time, 4DOS? Keep handing in those suggestions; a form will be available at the Club meetings to facilitate this sa a:

-JK

SYSOPERA

Well, our intrepid sysop is once again in the land of his ancestors, so I am looking after the BBS by remote control, which means that Validation and the turnaround for F)eedback To The Sysop are slower than when we have an active sysop who can sit at the keyboard.

In this column, over the following months, we'll try to put in print some hints and tips that will hopefully be useful to new users and to old hands.

One useful command that is not widely known is //QSCAN.

This "resets the Q-Scan pointers", which means that if you are a new user or you haven't logged in for a while, you can type //QSCAN and the next time that you log on you can read just the messages that have been posted since you last logged on, using the N (Read New messages one by one on all boards) or Z (zoom through messages continuously at full speed, useful for saving all messages to a log file and reading them offline). You usually only need to use this command once; after that you just log on regularly to catch up with the News. //QSCAN saves you from spending hours downloading and reading all the hundreds of old messages, and gets you up to date very quickly.

The alternative to //QSCAN, which many people appear to do, involves going to the first board, using the S(can) command to get to the last message, reading it and moving on to subsequent boards until all are up to date, which can take quite a long time. *[Readers should not take this to mean that the backlog of old messages might not contain as interesting material as the current flow, especially on those boards where timeliness is not an issue, such as* **Recent Uploads**, or even **Help**. *Ed.]*

The next command I have been asked to cover is //UPLOAD. This one allows you, *using a communications protocol,* to P)ost text as a message on one of the boards or to E-mail it.

When you write a message, you have three options available to you:

1: *Type it online after pressing* **P** *or* **E**: This method is a sure way of quickly building up a large telephone bill, and is prone to errors from line noise, and frustration by the limitations of the BBS line editor.

2: *Type it offline and use the ASCII upload function of your communications program toP)ost or* E-mail it. This is preferable to online typing, but again is subject to line noise; furthermore, the ASCII upload function of your communications program has built in delays which were designed to allow for the very slow I/O capabilities of the communication devices of the past.

3: *Type offline and send it via //UPLOAD*: This cuts out the possibility of line noise, since when you use one of the communications protocols such as X,Y or ZMODEM, retries are made if errors are detected. After you have typed //UPLOAD, you are prompted to select the number of the protocol you intend to use with your communications software. After you have chosen, you just start the transfer, selecting the same protocol in your communications software. The file is loaded into the BBS's internal workspace, and is no longer visible. This can be confusing, and first-time users are often puzzled, as nothing appears to have changed. The magic comes when your next command is to E-mail or P)ost a message; instead of putting you into the editor, the BBS uses the message you just //UPLOADed as if you had typed it in.

One word of caution: one of the versions of *Procomm*'s XMODEM protocol seems have a bug which appends rubbish to the end of a message uploaded this way, so it is best to avoid using XMODEM with *Procomm* if at all possible. The bug is due to XMODEM's padding out of files to make them an even number of bytes for the checksum, and can also cause problems with file uploads of certain unarchived wordprocessor files.

If you just want to send a file for a certain person, then the best way is to U)pload it to the Binary mail board. Since people other than the intended recipient can D)ownload the file, it is a good idea to use a compression utility which supports Passwords, such as *PKZIP* or one of the *PC Tools* utilities. Once you have U)ploaded it, you can E-mail the receiver that it is there and give the password. When they have D)ownloaded it, you should R)emove the file from the board.

Stuart the Multitasking Backup Sysop

STRAWS IN THE WIND

It doesn't take much imagination to realise that as the race to colonise Cyberspace continues, a major question is whether access to this new dimension will serve to empower individuals and promote a decentralisation of governmental and financial control, or become a means of furthering centralised control. Such developments as the following, although aborted by public outcry, serve to underline the nature of the danger.

LOTUS— NEW PROGRAM SPURS FEARS PRIVACY COULD BE UNDERMINED

{The Wall Street Journal, 13-Nov-90, p. B1}

Privacy advocates are raising the alarm about a new Lotus product that lists names, addresses, shopping habits and likely income levels for some 80 million U.S. households. Due for release early next year, Lotus Marketplace packs the data on palm-sized compact disks aimed at small and mid-sized businesses that want to do inexpensive, targeted direct-mail marketing. But critics say the product is just too good. "It's going to change the whole ball game," says Mary Culnan, an associate professor at Georgetown University's School of Business Administration. "This is a big step toward people completely losing control of how, and by whom, personal information is used." Janlori Goldman, a staff attorney with the American Civil Liberties Union, adds that the product raises "serious legal and ethical questions."

Lotus' critics concede that the product offers little more than is already available from established mailing-list brokers. But they say it is a greater potential threat to personal privacy because of its low cost, ease of use and lack of effective safeguards over who ultimately has access to it and why. They also say that the way it is designed allows users to ask a series of increasingly specific questions about small subgroups of people — identifying, for example, unmarried, wealthy women over 65 in a neighborhood. "They've crossed the line," says Marc Rotenberg, Washington director for the nonprofit Computer Professionals for Social Responsibility. "It simply shouldn't be allowed on the market."

Lotus counters that the product, still under development, has been tailored to address privacy concerns. No phone numbers will be included, it won't be available in retail stores and it will be sold only to "legitimate businesses" at verified addresses checked against a "fraud file," Lotus says. A contract will specifically limit its use and provide penalties for abuses. Owners will be allowed unlimited use of the names and addresses they buy, at a cost of $695 initially for the program plus 5,0000 *[sic. Ed.]* names and $400 for each additional 5,000 names.

Before long, the BBS's were buzzing. On Compuserve, for instance:

From:RGB::SEILER "Larry Seiler, 225-4077, HL2-1/J12
Date:12-Dec-1990 1144" **To**:@LOTUS CC: SEILER
Subj:Confirmation of Lotus' plan to sell data on individuals including income estimates and addresses

Folks,
I recently forwarded a message about a new Lotus product — a database on CD-ROM of 120,000,000 US residents with their estimated incomes and buying profiles. Someone questioned whether Lotus is really doing this, so I checked by calling Lotus and speaking to someone in pre-sales service.

It really is true. Lotus is still gearing up to sell their "Household Marketplace" product, and it really does give information on individual people, not just regional statistical summaries. I learned the following (and I asked for literature, so I'll soon know even more):

1) Yes, it really *does* have names and addresses of individuals.
2) They have divided up the database by regions, and you specify the region you are interested in when you buy the product. That explains how they could have 120M people in their database and still sell you just one CD (or a few) for your purchase price.
3) They also have a "Business Marketplace" CD with data on 7 million US businesses.

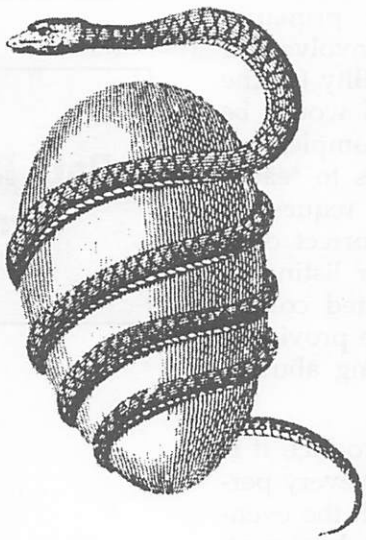
I forebore from yelling at the sales-type who handled my call, merely asking if there was a place to write with comments about the service. Apparently the sales types haven't heard of the

controversy the product is raising, since she replied that several different reports can be generated by the product, and some of them do have space for comments.

GREAT! So not only do they have the audacity to print an estimate of your income (which could be quite damaging if they get it wrong, and is an intrusion into your privacy if they get it right), they also have space on the disk for arbitrary comments about you — and they'll be selling this data in volume to mass marketing companies across the country!

In interviews, Lotus has said that individuals will NOT be able to correct their own entries, or even see what they are. I didn't try to confirm this in my call to Lotus, but I did confirm that the person who reported it — Rich Salz of BBN — has an excellent reputation on the internet. Also, everything he said that I checked with Lotus is absolutely accurate. Further, the Wall Street Journal has reported on it — saying that the database has ages, marital status, and other such personal data as well.

So I believe it, and you should too, since it is going to affect your life. Remember — a database of 120 million US residents comes to almost half the people in the country. Considering that the database is probably biased toward those with higher incomes, the chances are *really good* that anyone able to electronically read this message is in the database.



What can you do about it? A couple of things. Lotus has said that they'll omit from their database anyone who asks. Therefore, start by writing to the address below. Tell them that you don't want to be in the database, and tell them exactly what you think of their database. I've appended a copy of my letter to Lotus for an example.

Second, pass this message along to anyone whom you think might care. To me, this is not just a matter of privacy. Lotus is going to sell information behind our backs — we are not allowed to dispute their data or even know what it is. Worse, Lotus is going to sell rumors about our income. Still worse, they will do it on a scale never before achieved. This should not be tolerated.

Please help to stop Lotus.

Thanks, Larry Seiler

Here's my letter. Also send copies of your letter to the president and the CEO of Lotus, if you want to let those at the highest levels know that you are displeased with their product.

Lotus Development Corp.
Attn: Market Name Referral Service
55 Cambridge Parkway
Cambridge, MA 02142

Dear Marketeers,

I do not want my name included in your "Household Marketplace" CD-ROM database, nor that of anyone in my family, at any address I have ever lived at. To be specific, please make sure that the following entries are **NOT** included in your database:

>any last name (especially Seiler, Schmidt, Poffenberger, or Zwerner) at 198 Linden Street, Boylston MA

>any Seiler family name at 53 Oak Street, Waltham MA

>any Seiler family name at 77 Reed Road, Hudson MA

As you have it set up, I think your "Household Marketplace" CD-ROM database is an incredible intrusion and ought to be illegal. I am a computer professional, so this opinion is not based on any native dislike of computers or databases. The problems I have with your proposed service involve the way in which you plan to administer it, the way in which the data will almost certainly be used, the type of data you are including, and my conviction that you will vigorously seek to avoid responsibility for errors in your database.

First, *administration*. I have heard that you are not providing any means to correct errors in your database. The potential for long term damage to individuals from use of your database is therefore enormous. Even if an individual knows that your database is false, users of your database will almost certainly believe the CD-ROM data in spite of any disclaimers or evidence offered by the individual.

Second, *use of data*. Given the fact that law enforcement agencies are nearly powerless to shut down obviously illegal boiler-room businesses, it is absurd for you to claim that you will only provide the data to legitimate businesses. You

won't be able to prevent your product from being used to defraud individuals by huge numbers of illegal operations. One way or another, essentially any business wanting your database will be able to get it — and it will be of special value to illegal and borderline businesses.

Third, *type of data.* I understand that you plan to publish "income estimates". There is no legal way for you to verify income, unless an individual voluntarily provides that information. (I never do, except when the data is legally required to be held in confidence.) It is absolutely unacceptable for you to publish what amount to rumors about people's income. The possibilities for abuse are tremendous.

Fourth, *responsibility.* I understand that you will not permit individuals to find out what information you are spreading about them. The only likely reason for this is that you don't want anyone to find out that your information about them is false. Therefore, while you will sell this product on the basis of providing reliable information, you aren't prepared to be responsible for the accuracy of your information, or for the damage that false information (or even true information) might cause. So as you see, my concerns about your product are not primarily about privacy, although privacy is involved. If you were prepared to take responsibility for the accuracy of your information, then I would be willing to accept your service. For example, you could send copies of the data entries to *each* individual in your database, with a request to write back if any of the data is incorrect or if they want to be removed from your listing. If you did this, and made the requested corrections, then I would feel that you were providing a positive service, rather than making abusive use of unverified data.

In conclusion, if you market this product, it is my sincere hope that you are sued by every person for whom your data is false, with the eventual result that your company goes bankrupt. That would be a pity, since you make many fine products. However, that is preferable to permitting you to spread rumors and encourage abusive business practices. It would be better if your chief officers went to jail, but that will apparently require new laws to be passed. If you persist in your plans to market this product, a lot of people will be pushing to make that happen. I suggest that you abandon this project while there is time to do so.

Yours most sincerely,

Larry Seiler

From:jkays@msc.edu **To:** msc@msc.edu **Date:** Wed, 19 Dec 90

Lotus has set up a removal service for this database. Address is the same, just different:

Attn: Marketplace Name Removal Service / Lotus Development Corp. /55 Cambridge Parkway / Cambridge, MA 02142

In addition, Lotus gave me the name and address of the company they get the information from. Removing your name from here will could cut down significantly the amount of junk mail you get:

Equifax Options / P.O. Box 740123 / Atlanta, Georgia 30374-0123

Also, for those of you who have the phone number to Lotus, they will not be able to remove your name over the phone anymore, due to legal concerns (yeah, right).

Jeff.

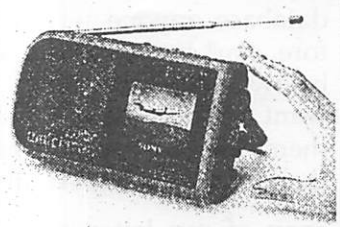
[Lotus abandoned their plans to market this product in view of numerous protests from the public. Ed.]

Data Read Error

LCD TV runs at length

Sony Corp. is about to introduce a three-inch liquid crystal television set able to operate for eight hours with batteries at ¥42,800.

The Color Watchman FDL-307, to go on sale Feb. 15, is able to run three to four times



longer than other models.

The output power of the new model is 500 megawatts, which is three to four times more powerful than other models.

"...and, with its output of 500,000,000 watts, is seen as a major breakthrough in the miniaturization of Japan's national power grid.

(From the Japan Times)

In the middle of January, members received postcards from TPC Programs Director **Stuart Woodward** *announcing a demonstration of* **SUPERBASE 4** *by representatives from its UK manufacturers, in town for a period which did not coincide with a TPC meeting. Once again we hear from Stuart, as he tells us what happens when*

SUPERBASE COMES TO TOWN

This presentation started for me when I learned of the imminent arrival of Nigel Lovett-Turner and Andy Stafford from Precision Software. I had to act quickly to arrange a meeting, so that all could get a good view of the *SuperBase 4* database package, which runs on IBM PC-compatibles under Microsoft *Windows*.

Windows seems a love it or hate it program, but this demonstration of *SuperBase 4* did more to encourage me to use *Windows* than the presentation at the club by Microsoft or anything that I have read in the computer magazines.

It showed a fundamental difference between it and plain old DOS which will grow as more companies utilise the concept of Dynamic Data Exchange, whereby data can be linked across various programs, permitting applications from different software houses to be used in conjunction. This can be easily seen when using the clipboard to cut and paste data between applications, but the real power is demonstrated when *Windows* software packages can directly control each other. E.g., a button on a *SuperBase* form can run *Excel* and send the data to it; *Excel* thereby becomes a spreadsheet server for the database. *Excel* appears, recalculates the tables sent to it by the database, and sends back a completed chart to be displayed. *SuperBase 4* was shown running in conjunction with Microsoft-*Word* and was able to make new items appear on *Word*'s menus. This allowed database functions to be called directly from within *Word*, and updated from within either.

One of the aims of the design is simplicity of use, reflected in the layout of the screen. The bottom looks like a video or tape player, with the standard buttons: forward, reverse, fast forward and stop, along with unfamiliar symbols for goto-start and goto-end. With the mouse you can navigate quickly through your database. You can sort, index, search in almost any way. The powerful-but-simple-to-use philosophy was imposed on the programmers by the sales staff: "If we can't explain it, then the customers can't use it". *SuperBase 4* already comes in several European languages, and their trip to Japan was to research the possibility of a Japanese edition when *Windows* is released for the NEC and other Japanese machines.

SuperBase 4 is unusual in that it is very easy to incorporate graphic images such as photographs into the database fields, to incorporate logos into forms, or to create meaningful symbols for "buttons". Nifty logos and backgrounds can be imported via one of the standard graphic file formats; currently TIFF, .PCX, *Windows* Metafile, .IMG, .EPS, Bitmap are supported, with .GIF and TARGA coming soon. Software that interfaces to a video camera can be used to acquire images.

Also in keeping with the *Windows* philosophy, buttons can be created to call up other screens or show more data. This was demonstrated by a map of the UK with buttons over the major cities, which would bring up a more detailed map with buttons for the points of the compass to show the surrounding areas. On these city maps other buttons would be able to call up data for each shop they represented.

The software looked slick and powerful, but easy enough to grasp. The rare occasion of having a foreign software company's representatives captive on the hot seat caused a volley of questions probing international support policies. In Britain and the US support can be obtained by fax, and via Compuserve. Upgrades retail at about 10% to 20% of the box price; registered users will receive upgrade reports. Support may be extended even if you have brought in a copy from outside of the local distributor's area, but in that case they recommend that the distributor charge for support.

The suggested minimum hardware is a 16 MHz 286 machine with 1 MB of memory. The price is £595, US$695 (around $400 if you shop around). The software is currently bundled with *Windows, Word for Windows* and *Excel* as a package for the US Air Force. It is also in use by British Airways, Citibank, Merrill Lynch, Boeing, and Microsoft Germany.

-SW

Q&A

Q: *Is there a Fax/Modem for a laptop?*

A: **James D. Traill**: There are several of them, including, as I notice, a Fax/Modem unit for Toshiba laptops with MNP5 2400 baud modem, price around US$400. See *PC Magazine* and *Computer Shopper*. The August issue has a whole section devoted to Fax/Modem comparisons. Battery-operated modems don't last more than 30 seconds on fresh alkaline 9V batteries when on ancient Pulse Dialing telephone systems, as in Australia. I notice the WorldPort 2496 is now down to US$429 with one dealer in the States. WorldPort (Touchbase Systems) now support the T1000SE and other Toshiba laptops/notebooks with a Fax/Modem plug in, "2496i".

Q: *Does the new Toshiba 1200XE sold in the US run any Japanese wordprocessing software in English-based DOS or by switching to a Japanese-based DOS? If this is not possible, is a similar model that can do this available in Japan?*

A: **Wolfgang Bechstein**: I don't think that a U.S. model Toshiba 1200XE can run Japanese DOS, since it (presumably) does not have the kanji ROM, for one thing. Doing Japanese on such a machine would then be limited to programs (or rather one program) designed to run on U.S. standard IBM PC hardware. There is a Japanese wordprocessor (the name of which eludes me at the moment) which uses EGA or VGA graphics to do kanji. It's being offered in the U.S. as well as in Japan, but the price is pretty steep, as I recall (something in the $400 to $500 range). I also don't know whether the Toshiba 1200XE supports EGA/VGA. If so, that software should probably run on it, but it might be better to get a Japanese-model Toshiba anyhow.

Q: *What printer does both romaji and Kanji/hiragana/katakana? A laserprinter and a dot matrix printer suggestion would cover quality and savings considerations.*

A: **Wolfgang Bechstein:** I am using an Epson VP800 (Japanese model, evidently) which is both fully IBM compatible and does kana/kanji quite beautifully (24-dot). There are various other models in that series (with wide carriages etc.), but as long as it's a VP-something, it should be O.K. For laser printers, Roger will probably tell you about the Kyocera, and recently, I believe, NEC has brought out a PostScript model that does kanji and supposedly is also IBM-compatible (?).

Q: *Are there any problems running Windows 3.0 on the Dynabook 286?*

A: **Martin Bruczkowski:** The source of many troubles is HIMEM.SYS. Apparently Toshiba computers have slightly different extended memory management from IBM. But HIMEM.SYS comes prepared for this, as I found out browsing through the READ.ME files in *Windows*. All you need to do is add a switch in the CONFIG.SYS, telling *Windows* what computer you have. For the Dynabook it's: DEVICE=HIMEM.SYS /6

Q: *I'd love to plug an HDD controller or a MIDI controller, or a joystick into my Dynabook 286. Is there any way except for buying a Dynabook docking station for more than ¥100,000?*

A: **Edward J. Zawlocki:** Why not look into a CRADLE, a product for the Toshiba laptops, just like all the other Connect Computer products. Specifically for the Dynabook, it lets you use one card with the unit, any size. List is ¥74,000, but let me know if you are interested and I can fax you further information and your cost.

A: **Martin Bruczkowski:** I happened to see an interface that plugs into the Dynabook connector and contains one XT slot. It was built by Stuart, and contained about 3 resistors, a capacitor, and a tiny crystal oscillator AT (for ¥100). That's all that's needed!

Q: *I'm looking for a laptop with a hard disk. Any recommendations, O Wise Ones???*

A: **Roger Boisvert:** Care to tell us what you are looking for in a laptop? Does it need a battery? What's the smallest drive you can afford to use? I'm a Toshiba junkie myself, but with good reason. One of the computers I am thinking about buying is their newest non-hard drive model. It's expandable to 8 MB RAM, which can be used of course as a drive. Lasts supposedly 8 hours on battery, but I would guess 5 hours is more realistic. If I can cram all the stuff I really want into 8 MB, I just might buy it. Maxed out to 8 MB the thing is still cheaper than a 20 MB HDD version. Haven't bought, still thinking. I finally broke down and bought another two 20 MB portables. I like them, but am really dissatisfied with the battery life. When I want to sit down in a coffee shop (no phone calls, no interruptions) to get some serious writing done, one and a half hours battery life is not enough. So what are your needs?

A: **Stuart Woodward:** Is the RAM drive option safe enough for normal use? I find that small RAM drive on the Dynabook can be lost for no real reason. Though it's nice and fast if you want to do some coffee shop compiling. The Dynabook with the 20 MB drive is very nice to carry around and doesn't weigh very much more than the standard one. Looking forward to the days when Hi-Speed Non-Volatile ROM Drives come in!

A: **Martin Bruczkowski:** There are faster laptops, there are lighter laptops, but there are no laptops with Zeos price: US$1,995, and the following features: 12 MHz '286 20 MB hard disk (Conner 2.5"), VGA with 32 shades of gray, backlit 1.44 MB 3.5" floppy drive 1MB RAM expandable to 5 MB, parallel, serial, modem ports 7.0 pounds (Zeos claims 6.5) This is not a list price, from which you could expect discounts; Zeos sells the machine directly.

A: **James D. Traill:** Zeos Laptop a good buy? What with an 80286 microprocessor at the helm? Ummmm... think again... or stay with the CP/M of the '80s! More than $999?

A: **Arturo Perez:** Get that Toshiba from Step which costs about ¥190,000 with a 20 MB HDD.

Q: *Could someone give me the telephone number, address or directions to Step?*

A: **Wm. Auckerman:** The Step phone # is 03-3253-8800. If your prices are from a Step ad, however, you may be disappointed. I just bought a new NEC 9801 RA21 from Step. Their ad in a magazine that went on sale 11/15 was ¥309,000. I called on the 17th and was quoted a price of ¥329,000. When I mentioned the ad, the salesman laughed! He said that that was the price at the time of the ad. Naturally I was mad, and decided to buy from somewhere else. But after checking around I discovered that Step was still at least ¥10,000 cheaper than anywhere else, so I bought from Step. **Bottom line:** Step is probably cheapest, but you pay more than the advertised price.

A show of hands at the last TPC meeting revealed a surprisingly high percentage of laptop users among those present. TPC member **Richard May** *shows us further evidence that across the land manufacturers are*

Topping the Japanese Lap

"Downsized" PCs Win over Reluctant Users

Personal computing in Japan has finally taken off in a big way this year, as smaller, low-price notebook-sized personal computers are finally overcoming the Japanese hesitancy to use PCs. Outfitted with high-resolution liquid-crystal displays and battery-saving features, notebook PCs have become a trendy item in fashion-conscious Tokyo. Toshiba uses race car drivers to advertise its best-selling *"Dynabook"*. Television comedians recommend carrying a notebook PC as a ploy to snag dates at trendy Roppongi singles bars. In short, the huddled urban masses of Tokyo are finally liberating themselves from pencils and erasers.

"Wapro" and lower prices open the flood gates

Japanese word processors, or *"wapro"* as they are called here, paved the way for this year's boom in notebook PC sales. Wapro machines, limited though they are in capability, accustomed users to PCs. While European and American users learn keyboard familiarity from typewriters, kanji character dedicated word processors fill this role here, but getting used to personal computers and keyboards has not come easy to the Japanese. Keyboard phobia among males over 40 is a open joke in Japanese offices. In desperation, some companies took strong measures to overcome this computer shyness. Omron Corp., a Kyoto-based maker of electronic industrial controls, requires middle-level managers to take computer literacy courses. Recently the firm purchased 1,200 Toshiba Dynabook notebook PCs for employees to make sure the training was put to good use.

Manufacturers had at least two compelling reasons for reducing the size of PCs. In the first place, personal computers here were regarded as luxury items — expensive, impractical and bulky. With new manufacturing techniques, such as surface-mount technology, and with large production runs, makers could afford to cut prices. Entry-level notebook such as NEC's "98Note", for example, could go below ¥100,000 by the end of this year. This is the same pricing point at which VCR and CD player sales took off strongly in Japan.

Another reason, specific to Japan, for reducing bulky desktop computers is the crowded Japanese environment. To the average Japanese worker it is no mystery why smaller computers are essential. Take about 122 million people and pack them into less than 4% of Japan's total land area. (The other 96% is fields, woodlands and mountains.) Then put 60% of the 61-million-strong labor force into white-collar jobs involved with the so-called "information industries". All the while, bear in mind that the average Tokyo family of 4 lives in a cramped 67 sq. meters (720 sq. ft.). Tight housing conditions are mirrored in the work place. Notebook PCs simply use less precious desk space.

When Japan's manufacturing geared up in the 60's, its steel and shipbuilding industries paved the way to recovery. Shoguns of industry here evoked this heavy industry image with the Japanese term *"ju-ko-cho-dai"*, (heavy, thick, long, big). Now Japanese media use a different term when speaking of domestic manufacturing ideals: *"kei-haku-tan-sho"* (light, thin, short, small). This is a pretty good description of the engineering goals of Japan's portable PC makers.

Toshiba and NEC duel for "King of Notebooks" title

Competition within Japan is fierce for the top position in notebook PCs. NEC and Toshiba are slugging it out, with Sharp Corp., Seiko-Epson, and others ready to enter the ring. Electronics powerhouse NEC Corp. covers the full range, from supercomputers to notebook PCs. Its strong suit, though, is in smaller systems, especially PCs. Its more than 50% share of the domestic PC market accounts for nearly one-third of NEC's total computer revenues. Its PC 9800 series of 16-bit desktop PCs has amassed a software library of more than 10,000 programs, the largest in Japan.

In the U.S., however, Toshiba and Zenith tied for the lead in the combined laptop/notebook PC market with 20% each, while NEC was a dis-

tant third with 12%, followed by Compaq. Calling itself the "King of Laptops", Toshiba built an early lead on the success of its T3100 series of "luggable" PCs. At over 16 lb, Toshiba's original 3100 series got this class of PC off the ground. They established a reputation for reliability, while providing some portability. Portable, that is, as long as one had a cast iron shoulder, and an electrical outlet nearby. In a pinch, it could be lugged home for a night session. Its performance and small footprint on the desk were its main attractions. There remains a solid market for expensive luggables. Power users requiring large 100 MB hard disks, very fast processors and the ability to attach a host of options still buy them in large numbers.

(For this portable segment, Japanese manufacturers are developing high capacity hard drives capable of storing 100 MB in a tiny 2.5" form factor. Already selling are high capacity drives, such as Hitachi's DK312, which packs a hefty 250 MB onto 6 platters in a slightly larger 3.5" box. By the end of this year, users can expect optical disk storage products designed specifically for portable PCs. The first batch of models will offer 128 MB of storage in a removable diskette similar to an audio compact disk.)

Using expertise developed in low power-consuming CMOS IC technology, Toshiba next introduced a new class of small, light "notebook" machines, whose functionality, styling and remarkably low price made them an instant hit with Japanese consumers. Weighing under 2.7 kilograms, and the size of an office-notepad, notebooks caught the public's imagination. The Dynabook was voted the hit consumer product of last year by a leading monthly magazine in Tokyo.

Just how small is small: "Palmtops"

Sharp Corporation was one of the first to attack the problem of providing truly portable computing power for the business traveller. Sharp's "Wizard" fit-in-your-shirt pocket electronic organizers sell well worldwide. Sharp claims sales of more than 100,000 units a month. Joining the electronic diary market were Canon, Epson, and NEC. While lacking the flexibility and storage capacity of notebook PCs, they have filled a need. Yet what the shirt-pocket computing market really seems to need is notebook PC power in an even smaller package.

PC power in the palm of your hand

Sony struck the first blow in the PalmTop market, announcing recently a machine with the capability of a full-blown computer in a tiny plastic box that fits in the palm of a hand, albeit a very large hand. Outfitted with a pen-like instrument and built-in handwriting recognition software, the machine is very easy to use. But its non-IBM compatible operating system will limit its initial market acceptance. Nevertheless, it's a finely crafted, well-planned product.

In a move to provide more storage in these featherweight portables, new standards for solid-state memory have been proposed. One such standard, developed by the Japan Electronics Industry Development Association (JEIDA), uses credit card sized EPROM memory cards. Signed on to use the cards in future notebook portables are not just Japanese makers, such as Seiko-Epson and Toshiba, but IBM and Lotus Development as well.

Will Toshiba hold on to its early lead in notebooks? International Data Corp. Japan's PC specialist, Ken Fukuda, does not think so. "NEC will eventually overtake Toshiba in the notebook

Little Pictures of Japan

Of Little, Little, Little Things

NOW the Japanese people are never very tall. They live in little houses, and they like little things,—little, little, little things. They love to make tiny carvings and paintings so small that their figures can only be seen through a magnifying glass. They like to have the tiniest of wire cages in which they keep little singing insects instead of birds; and they can make a whole garden with growing trees and fish ponds wherein real, live fishes swim, all so small it could be set upon a tea tray! And so they make little poems too,—little, little, little poems,—hokku poems with a whole world of meaning all shut up in seventeen syllables,—just the flash of a picture as if a window had been suddenly opened upon some beautiful scene, and then as suddenly closed again,—just a flash, and all the rest left for him who hears, to imagine and to feel.

Like little dewdrops are these poems, no more in size than the tiniest drop of water, but ah! reflecting all the shine and color of the sun.

race, at least in the domestic market. NEC has a vast chain of dealers dedicated to NEC PC sales, something that Toshiba just cannot match. Its large library of software will provide an additional inducement to buyers," says IDC's Fukuda.

More bang for the bytes:

That's what portable personal computer users want. Japanese makers have first class screen technology and extensive experience in miniaturization of components. Furthermore, through long practical experience in miniaturizing consumer electronic products, the Japanese are uniquely positioned to compete in world markets both as makers of notebook computers and suppliers of parts to other manufacturers.

For an example of this dual role, take a look at the partnership of Japan's Sharp Electronics and Texas Instruments of the U.S. A latecomer to the portable computer industry, Sharp stunned the local market with its PC-6220 model. Leveraging itself through a technology agreement with Texas Instruments, Sharp took its superb backlit liquid crystal display and designed a well-thought out, super-thin notebook with a capacious 20 MB hard disk. At 4.5 lbs., the Sharp model is sold abroad by TI as the "TravelMate". Both firms benefit, with Sharp providing the screens to TI and a host of other portable PC makers.

Better screen technology

Despite early user complaints about their quality, Japanese firms have pushed liquid crystal displays to new levels of resolution and brightness. Sharp, Toshiba, Hitachi, and other producers of Japanese notebook computers have developed expertise in making thin-film transistor or TFT displays, which are the mainstay of the current generation of truly portable notebooks. But prices for premium displays are still high. Higher resolution screens and color TFT displays require building over a million perfect transistors on, for example, a 300 square centimeter device, an extremely difficult engineering feat. Japanese engineers are refining manufacturing processes to improve the yield of good devices, and thus lower prices.

More storage capacity

Hard disk drive makers, such as Conner Peripherals in the U.S., have made millions of dollars supplying thin-profile hard disks to portable PC makers. Still, Japanese companies are also major suppliers. Until now, Toshiba purchased most of the drives for its portables from Conner. But Toshiba will spend more than US$100 million during the next three years to expand its disk drive manufacturing facilities in Japan. This could be a real challenge to Conner, which counts on Toshiba for over 12% of its total revenues.

Longer battery life

Battery life improvements are moving along unexpectedly slowly. Battery life presently ranges between 1 to 3 hours, still too short for most users, just enough to do some word processing on the shuttle bus en route to the airport. At that point the batteries are gone, and memos in progress are put aside until arriving at the destination. Analysts note that battery technology for portables has improved at a paltry 5% per year. "What is needed is a 25% or more gain in battery life per year, but for now we are creeping along," says Roger Boisvert, computer maven in Tokyo for McKinsey & Co.

An exception to the short battery life problem is the recently introduced Poqet Computer, which manages to squeeze 8 hours of computer time from just 4 small flashlight C4 batteries. The U.S.-based Poqet is partially owned by Fujitsu, better known for its large mainframe computers. The 2 lb. Fujitsu "R-Card" computer incorporates the Poqet technology using IC card memory.

What to expect... real soon

What does the future hold for smaller PCs, and just how small is small in the computer world? Industry experts here assure us that many new developments are yet to come this year.

Expect new competitors, they warn us. Non-computer makers needing to diversify have not overlooked the success and profits of the notebook PC market. Look for some Japanese sunset firms in steel, chemicals, and heavy equipment to make their move soon. Prime example — the world's largest steelmaker, Nippon Steel. Already a reseller of engineering workstations, the firm hired away design teams from Citizen Corp. and NEC to work on a 386-SX based "dream" notebook that was introduced at the giant Fall Comdex Show in the U.S.

PC manufacturers and suppliers of key components such as IC memory continue to come up with new engineering tricks to pack more com-

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As laptops begin to supplant desktop units in the lucrative first-purchase market, some of the considerations the specifications never mention become more relevant to the average user. **James Traill**, *Grand Waszir of The First Amendment BBS, speaks of delegating*

Power to the portable

The first true PC-style laptop, the original Grid Portable, demonstrated as long ago as 1981 just how far technology still had to go. It used an 8086, had 128Kb of RAM, bubble-memory cartridges instead of floppy disks, and an 80x25 text-mode gas plasma display. It also needed mains power to run at all, and a magnesium casing to dissipate the enormous amount of heat generated by the tightly packed circuitry. Its "grid-iron" nickname was well-earned. Today, many of the technological problems have been overcome, or at least sidestepped. There are now battery-powered 32-bit PC clones from the still-surviving Grid, as well as others with internal hard disks and high-resolution graphics screens, using emergent technologies such as backlit liquid crystal displays or self-illuminating electroluminescent panels. But some problems remain. The battery life of these machines is measured in minutes rather than hours. Still, the pace of change in the portable computer market is rapid. Developments in every crucial technological area are taking us toward smaller, faster, more capacious systems that can run for entire working days on a single rechargeable battery pack. Indeed, some of these developments could well find their way into the traditional desktop PC market, and finally blur the distinction between portables and the rest.

NMOS, CMOS

The fundamental technology that has made portable PCs viable has an obscure name: Complementary Metal-Oxide-Silicon (CMOS) fabrication. While the N-type Metal-Oxide-Silicon (NMOS) technology used in early microprocessors and most current memory and logic chips provides high component densities, it's also a high-power technology. CMOS, on the other hand, consumes the minimum of electrical energy and can cram fewer transistors into a given area of silicon, but it requires more fabrication steps than NMOS. Thus, CMOS chips are generally less complex and more expensive than NMOS chips. But as power consumption becomes crucial, CMOS processor technology becomes more and more important. Intel itself produced CMOS versions of the 8088 and 8086, but it was left to a third-party, Harris Semiconductor, to produce the CMOS 80286 now used in many laptop AT clones. There is as yet no low-power version of the 80386, meaning that 32-bit laptops tend to be hungry for battery power or demand mains supplies. Elsewhere in the laptop design, complex PC support chips, like the sets built by Chips & Technologies or Zymos, are now routinely built into CMOS technology.

Memory chips too are adapting to low-power requirements. Static RAM chips, requiring no refreshing by the central processor and featuring very low current requirements to maintain their contents, are getting cheaper as supply volumes increase. There's no doubt that in modern laptops the electronic circuitry that actually does the work consumes far less power than the display, and the storage and communications devices necessary for a complete system. As long as the system is built around an 80286, an 8086, or an 8088, then the hardware design is more a matter of bolting together CMOS building blocks than anything else.

LCD gets the crown

Disregarding the cathode-ray tube (CRT) which, despite its high information density, is too bulky, power-hungry and fragile for true portable use, there are three technologies that dominate the laptop market. These are liquid crystal (LCDs), gas plasma (GPDs) and electroluminescent displays (ELDs), and each has its advantages and disadvantages. LCDs have high resolution, are lightweight, consume very little power, and are ideal for battery-powered machines. But they don't emit any light, and require strong ambient lighting or backlighting to be visible. They have poor contrast, with a very narrow viewing angle which needs careful adjustment. They also tend to be slow, so that fast typing or cursor movement always leaves the display struggling to keep up. ELDs emit a bright and ergonomic yellow light. They're visible in any ambient condition and have a wide viewing angle. But they require a 200V supply to excite the zinc sulfide and man-

ganese phosphor that produces the light, and so are power-hungry. They're also very expensive compared to LCDs with similar resolutions. GPDs have bright orange light-emitting displays with high resolution in up to 16 shades. But these require even more power than ELDs to excite the neon or argon-neon gas inside the display panel. They also have short useful lifetimes and are expensive. All these trade-offs mean that LCDs, either backlit or ambient, at resolutions up to VGA's 640 x 480, are the most common displays used in battery-powered laptops like the Compaq SLT/286. Some machines, like the Gridcase 1530, use ELDs or offer them as alternatives to LCDs, but this dramatically reduces battery life. GPDs are really only found in mains-powered laptops like the majority of the Toshiba line.

Recent developments in LCDs, however, point to a new dominance for this technology. First is the active-matrix LCD, first used commercially in Apple's Macintosh Portable, but surely soon to be seen in the PC market. This uses a thin-film transistor to drive each pixel in the display, providing fast response even at 16 MHz processor speeds and upwards, and also giving higher contrast and wider viewing angles. Apple, for example, didn't find it necessary to backlight the 640x400 active-matrix LCD in the Portable, and the display quality is still remarkable. Second is the color LCD, invented by Epson's Susumu Aizawa and first seen in 2" portable color TVs from Epson's parent Seiko. This uses three layers of LCD "shutters" and color filters against backlighting to give a color display, and has now finally been used in portable PCs from Hitachi and Sharp. Resolutions are still relatively low, the displays are small — less than 5" — and sharpness and contrast are lost by the shuttering mechanism. But color LCDs are the wave of the future, and the active-matrix backlit color LCD will be the standard laptop display in the 1990s.

Storage is up

The three main components of desktop mass storage, namely RAM, floppy disks, and hard disks, have simply been transferred to the laptop market. The way these technologies are handled, however, has changed for portable use, and different technologies are also being tried out in an attempt to deliver desktop performance at a lower cost in terms of battery lifetimes. The now-standard 3.5" floppy disk drive is an excellent choice for laptop use, since the latest third-height drives from NEC and others don't take much power, and the media are robust while still storing more than 1 MB of data.

Hard disks, however, are a different matter. Any hard disk drive involves spinning a disk platter at 3,600 rpm while flying a read-write head a micron or so above its surface. Spinning the disk uses up battery power, while flying the head so close to the disk surface causes trouble for systems that can be moved and jolted at any time. Special hard disks specifically aimed at the portable market, such as the 40 MB and 100 MB drives from Conner Peripherals, have been produced with particularly low power requirements and with automatic disk and head locking when the power is off. These drives, used in most high-performance battery-driven systems, can be powered up and down under the control of power-saving circuitry, and provide a reasonable trade-off between the storage capacity and the power consumption.

There's no reason, however, why portable hard disks should be the same size as desktop drives. PrairieTek has already produced a two-inch drive that's smaller and lighter than, but holds the same amount of data as, the Conner 40 MB drive. Conner and PrairieTek are racing each other to market small drives holding up to 80 MB in a unit measuring less than three-quarters of an inch thick and consuming less than two watts of power in active mode. These drives will also be more robust than desktop models, match them in speed, and will inevitably find their way into small-footprint desktop systems.

Meanwhile, what about RAM? This is the ideal laptop medium, combining high speed, high storage density, and low power consumption. But RAM price fluctuations over the last few years, and its inherent fragility, have made it less attractive as a bulk storage medium. That's not to say that future laptops won't have 8 MB of RAM and plug-in ROM cards holding another 4 MB or so; just that for the foreseeable future the low-power small-footprint hard disk looks more cost-effective.

The battery's down

For as long as battery-powered laptop PCs have existed, the rechargeable nickel-cadmium (NiCad) cell has been a standard fitting. It's small and lightweight for its power rating, can be recharged many times, and has lifetimes that roughly match the average working day, as long as the demands made on it aren't too high. For instance, in a laptop system running a CMOS

8088 at 8 MHz, without backlighting for its CGA-compatible display and with a single 3.5" floppy disk backed up with MS-DOS in ROM and a RAM disk for temporary storage, a NiCad pack can easily provide six hours' continuous use. Change that into a 16 MHz 80386 with 4 MB of RAM, a hard disk, and an ELD, and the same pack will last only a quarter of an hour. The limits of NiCad technology in terms of useful lifetime on a full charge are now becoming apparent. There are other drawbacks to NiCad packs, the most pernicious being "charge memory". This is brought about by the tendency of users to top up NiCads with the mains charger wherever possible, which actually reduces the maximum charge that the cells can hold. If a partly charged NiCad is placed on charge, the theoretical maximum charge level isn't reached, and on each future charge this new lower maximum isn't reached, and so on. Over a period of frequent recharging, the real-life lifetime of NiCad cells can decline alarmingly from six hours, say, to one. Only a complete discharge, performed by driving the disk drives continually using software like Traveling Software's Battery Watch, followed by a full recharge, can restore them to anything near their original lifetimes.

NiCads don't decline gracefully as they lose charge. The tendency is for perfect operation to be followed by a rapid decline through a series of plateaux at various levels, along a curve that's impossible to predict. This makes it very difficult to give users much indication of how much life there is in a NiCad pack, since the decline in capacity can't be monitored until it's near total failure. The charge memory and graceless decline of NiCads were two of the reasons behind the choice of sealed lead-acid gel battery packs for the Macintosh Portable. Apart from longer battery lifetimes, the voltage supplied by lead-acid batteries changes slightly as they discharge, and this change can be detected in software to give a battery gauge.

Lead-acid cells also decline gracefully over time, with a steadily dwindling voltage that gives the monitoring software plenty of chances to warn users of approaching trouble. The drawback of lead-acid gel packs is size and weight, yet compared with NiCad packs like those for the Compaq SLT/286 they don't look too bad. For the future, NiCad lifetimes will improve, although the fundamental drawbacks of the technology will remain. Sealed lead-acid gel packs will become more widely used, thanks to the Macintosh Portable. There will be some dark-horse developments, too, like long-life lithium cells, similar to those currently used to keep PC CMOS RAM settings intact for years at a time, and nickel-hydride batteries, which are lighter than NiCads, can be charged more frequently, and have no charge memory. With electronic developments allowing simple alkaline radio batteries to keep a PC-level machine, like the Poqet or the new Psion MC600, running for 100 hours or so, NiCad and lead-acid technologies should match those figures on more conventional-hardware before too long.

Power management

One way of extending battery life is to minimize the work that the battery has to do, and high-end laptops have developed a variety of strategies for cutting power consumption. Dedi-

Power

Cont'd from previous page

cated processors can, for example, monitor system processes and shut down functions and subsystems that haven't been used for a while, while other systems simply provide software that shuts down the backlit screen display after a set time period to save battery power.

As usual in the laptop market, the amount of power management that is done involves some trade-offs. Cutting the power to a hard disk's drive motor, for example, saves a lot of energy, because driving even a 3.5" diameter aluminum platter at 3,600 rpm at all times is a little wasteful. On the other hand, spinning the drive up from rest to that speed also takes up a lot of energy, and users may not like the long wait involved in calling up something as simple as a directory from a shut-down hard disk.

Some things, however, are simple common sense. Data transfers through the serial ports, either through a modem or by direct connection, are notoriously power-hungry, because the archaic RS-232 specification requires 12V supplies, compared with the 5V supplies of the remaining electronic circuitry. Shutting down the RS-232 hardware while it is not in use, avoiding the 12V supply problem, multiplies battery life by a large factor. At the extreme limit of sophistication, as in the Compaq SLT/286 and the Macintosh Portable, power management hardware and software can combine to put the machine into a "sleep mode", in which the only things retained are the RAM contents and the current state of the processor. In such a mode, a battery that could only keep the machine running for four hours in normal use can maintain the state of the system for a couple of days, allowing a user to jump back at any time to the precise point at which sleep mode was invoked. System components are shut down in power-consumption order, starting with the hard disk drive, and followed by the display backlighting, the actual display, the serial port, and finally the processor and the power management processor itself. Finally, if the power management processor is really clever, it will be able to wake up a sleeping machine on receipt of a remote signal received via a modem on a serial port.

-JDT

R & D

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puting power into less real estate. Hitachi, for example, is experimenting with massive-capacity 64 MB memories that will require less power.

Larger laptop PCs from Compaq and Toshiba already use Intel's latest and most powerful microprocessor, the 80486, but notebook products will opt for less expensive processors to keep prices down. Look for a rash of second generation notebooks sporting more powerful — but relatively inexpensive — Intel 80386-SX, 32-bit processors, an improvement over the 8088 and 80286 processors used in current entry-level notebooks.

A second generation of flat panel display devices will complement the increased processor speed of the 80386-SX based notebooks. These notebooks will have VGA resolution, giving near photographic display quality. A bit later, look for units with VGA-quality color and 64-tone gray-scale flat panel displays at prices less than US$4,000. This year's crop of color panel equipped notebooks, though, will just show off makers' technical ability. At over $10,000, Hitachi's latest color laptop will not find its way on to many personal desks.

The emerging "palm-top" market for computers will require new ingenuity to pack real-world business software packages into notebooks. These programs typically use massive amounts of dynamic RAM memory. The Japan Electronic Industry Development Association has made good progress in defining standards for IC cards, which will fit programs such as Microsoft *Windows*, Lotus, and kanji word processors onto thin packs the size of business calling cards.

Improvements in battery technology may eventually ease the task of PC system designers, but in the meantime designers are trying to cut the voltage required to drive PCs from 5 or 6 volts to 3 volts or less. This promises to extend significantly the time between battery recharges. Recently NEC kicked things off in this field by announcing a smaller battery for notebook machines with a life of 6 hours.

-RM

Brenda Laurel, B.A., M.F.A., Ph.D., Co-director and founder, with Scott Fisher, of Telepresence Research, a company devoted to research and development of virtual reality systems, brings twenty-five years of experience as an actor, teacher, and director to her work in interactive media. Over the last fourteen years she has worked in research and management for Atari and Activision and as a contract researcher and designer for Apple, Epyx, Aim, LucasFilm, and Carnegie Mellon University. She is editor of the book The Art of Human-Computer Interface Design *(Addison-Wesley, 1990) and author of the forthcoming book* Computers as Theatre *(Addison-Wesley, spring 1991). Here she discusses the application of dramatic principles to interactive drama and virtual reality, and proposes an agenda for research in the immediate future*

ON DRAMATIC INTERACTION

Since the beginning of my involvement with the computer medium, I've been driven by one very rich metaphor. As with a fractal, the closer I look at it, the more I see.

COMPUTERS AS THEATRE

Novices are often struck by the computers-as-theatre metaphor when they first encounter the virtual world of a computer game. Designers incorporate theatrical jargon into their process — computer generated "actors" receive "directions"; users "willingly suspend disbelief". But the comparison languishes once its superficial levels have been mined. The rich substrata of formal and productive knowledge that give the computers-as-theatre metaphor its power remain unexplored. Yet millennia of dramatic theory and practice have been devoted to an end which is remarkably similar to that of human-computer interaction design; namely, *creating artificial realities in which the potential for action is cognitively, emotionally, and aesthetically enhanced.* A "scientific" approach still dominates the design of human-computer interaction. We count keypresses, measure users' eye movement, and analyze errors, drawing on such disciplines as cognitive psychology and ergonomics. More recently, artistic disciplines such as graphic design and storytelling have gained grudging acceptance, but contemporary design practice accommodates them as something fundamentally alien to the computer landscape. Art and science, soft guys and hard guys, those who dream and those who write code — these form the thesis and antithesis of the computer dialectic.

But art is lawful. This notion of art turns the dialectic on its head. It is no accident that Aristotle, the originator of poetics, was also the progenitor of Western science. When we examine human-computer experience with the same rigor and logic, we can derive a set of principles — a poetics of interactive form — that can far surpass the piecemeal science which is currently the heart of human-computer interaction design.

MIMESIS

The root of the similarity of computer-based environments and art is the notion of *mimesis*: a representation whose object may be either real or imaginary. Computers blow a third dimension into the concept by adding *interactivity* — the idea that users can become co-creators, collaborating at the deepest levels in the shaping of a mimetic whole.

We are familiar with the idea of the computer as a medium-*emulator*. We paint with virtual brushes and make music with Macintoshes. We know that computers can mimic, expand, and augment the concrete tools of art. But we are less aware of the profoundly mimetic nature of the technology which allows us not only to emulate existing media, but to create wholly new ones.

And in order to do that, we have to decide what we're trying to create. Most of us begin by looking to the technology for the answers. There it sits, the ultimate shape-shifter. What does one do with a shimmering blob of unlimited potential?

BIG IDEAS

I got my first answer to that question from Alan Kay when I was working for him at the Atari Research Lab. He said that the way to know where you're going is to generate the right Big Idea. This Big Idea must be powerful enough to satiate you completely if you ever reach it. It must be impossible to reach from where you are now. When you've got the right Big Idea, then all that you think about and all that you do will align itself toward it, like mag-

netic particles, and you won't ever have to worry about doing anything irrelevant again.

The computer landscape is dotted with Big Ideas, like vortices, magnetizing thoughts and expressions. Some of them are quite familiar. Long ago and far away, in the land of punch cards and batch processes, there was the paradigm of conversationality. It was huge and impossible. Eventually it led to the command-line, tit-for-tat interface that we now find so unhip, but which exponentially increased the user's experience of interactivity.

Sketchpad and *Smalltalk* were signposts to another Big Idea — the representation of manipulable objects. The object paradigm asserts that we can emulate the physical properties of things — shape and mass and containerness — and that these virtual objects can provide a powerful metaphorical context for doing things with computers. Desktops, icons, files and folders all materialized in this magnetic field.

VIRTUAL REALITY

The Big Idea of the moment is undoubtedly the notion of virtual reality. From Mad King Ludwig's grottos to Disneyland to computer games, virtual realities have been lurking in our culture for a very long time. Now, at the intersection of fantasy (Vinge's *True Names*, Gibson's *Neuromancer*) and technology (the NASA VIEW system, Lanier's *Reality Built for Two*), the paradigm has finally coalesced. John Walker at Autodesk describes it as "diving through the screen into the world inside the computer". Finally, no more iconic representations, no more metaphorical indirection. We can treat the virtual world just as if it's real. Alternate reality in a box.

So what are we going to do when we get there?

In the NASA system, you can zoom through a model of the space shuttle or climb inside a robot. The Autodesk team envisions CAD workers walking around inside their own designs. In Lanier's version, two people can virtually inhabit the same virtual space and play virtual ball. The entertainment industry will undoubtedly bring us countless sports simulations and virtual travelogues. But I keep seeing this image, like something out of a sad surrealist movie — a bunch of figures wandering around in a lonely masquerade, occasionally tossing a ball. After the first techno-rush, you're going to want to talk to somebody. And maybe not just somebody hooked into a terminal. A *virtual* somebody. Marilyn Monroe, Einstein, Captain James T. Kirk.

I predict that, just as with computer games, we'll rip through the repertoire of imitations of games and physical activities, improving the technology and planting little signposts of convention, and then we'll to hunger for more complex interactions.

THE IF PARADIGM

And that's where all this hooks back into the theatrical metaphor. In the *Poetics*, Aristotle observed that human beings are hard-wired to learn, that they enjoy it tremendously, and that their favorite way of doing it is through imitation — acting things out. This is the impulse behind both theatre and computer games. The Big Idea is a vision of an experience where I can play make-believe, and where the world automagically pushes back. It's like cowboys and Indians or theatrical improvisation, only better — because half of my brain doesn't have to be concentrating on making an interesting plot. I just get to be in this other world, first-person, acting as myself or Captain Kirk or some other character altogether, and I get to see what would happen IF.

The heart of the Interactive Fantasy paradigm is the ability to produce robust dramatic interaction through manipulation of the same formal and structural dynamics that are present in any good play. The system would behave very much like a human playwright who is operating with a bizarre constraint: one of the characters is a

real guy, wandering around in your study, injecting lines and doing things that you have to work into your script. By embodying dramatic rules and heuristics in a computer-based system, dramatic action could be formulated in real time, shaping the responses of the virtual world and characters according to the choices and actions of the user.

The impulse to create an "interactive fantasy machine" is only the most recent manifestation of the age-old desire to make our fantasies palpable — our insatiable need to exercise our imagination, judgment, and spirit in worlds, situations, and personae that are different from those of our everyday lives. Perhaps the most important feature of human intelligence is the ability to internalize the process of trial and error. When a person considers how to climb a tree, imagination serves as a laboratory for virtual experiments in physics, biomechanics, and kinesiology. In matters of justice, art, or philosophy, imagination is the laboratory of the spirit.

It is not enough to imitate life. Drama presents a methodology for designing worlds that are predisposed to enable significant and arresting kinds of actions — where characters make choices with clear causal connections to outcomes, where larger forces like ethics, fate, or serendipity form constellations of meaning that are only rarely afforded by the real world. Dramatically constructed worlds are controlled experiments, where the irrelevant is pruned away and the bare bones of human choice and situation are revealed through significant action. If we can make such worlds interactive, where a user's choices and actions can flow through the dramatic lens, then we will enable an exercise of the imagination, intellect, and spirit that is of an entirely new order.

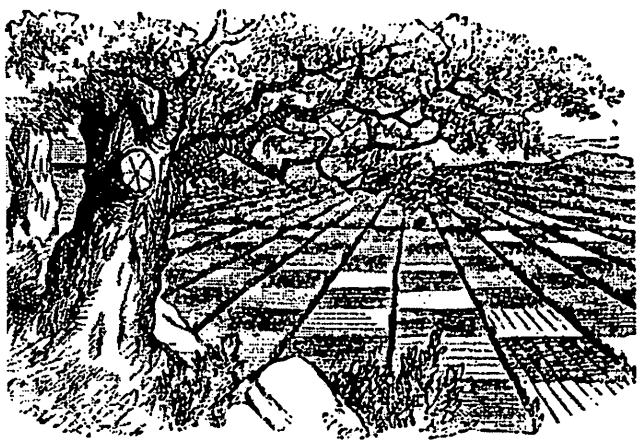
TO DESIGN OR NOT TO DESIGN

The "top-down" flavor of an IF system is in conflict with the fundamental notion of virtual reality for many workers in the ield. In their view, the idea of *design* by any artist other than the user is problematic: virtual reality should be an "empty space" in which participants can exercise the highest form of self-expression, self-discovery, and self-disclosure. As Meredith Bricken *[formerly of AutoDesk]* puts it, in virtual reality one can be captain of one's own ship in an ocean of one's own making. Proponents of this view often express emphatic resistance to the notion of designed VR worlds because they would foist the designers' imagination and point of view onto the participant. The Holy Grail here is a fantasy amplifier of the purest form, where one might quite literally make manifest the contents of one's own imagination. The empty space calls forth and automagically embodies that which is within us.

Peter Brook, a leading drama theorist and director, describes the theatre as an empty space:

I can take any empty space and call it a bare stage. A man walks across this empty space whilst someone else is watching him, and this is all that is necessary for an act of theatre to be engaged [Brook, 1968].

Note that there is a tree-falling-in-the-forest embedded in Brook's idea — there must be someone watching. But a more fundamental point is that an empty space is not theatre until some action occurs in it. Watch improvisational actors in an empty space. The space is soon populated with characters, words, actions, and real or mimed objects. In the performance of a traditional play, those materials are supplied by the playwright in the script. In interactive or participatory theatre, the audience is able to influence the action to a greater or lesser degree, but what is possible is always constrained by materials that are contributed, before and during the performance, by the author, director, and actors. In other words, the world of a drama is a relatively closed universe. The course of the action and the outcome can be variable, but only within the universe of possibilities created by the elements of environment, situation, and character.



The same is true of computer games. For participants, the "empty space" is filled with the potential for action that has been provided by the game's designer. For designers and programmers, the empty space is filled with tools (hardware, programming languages, utilities, etc.) from which worlds will be constructed, and the nature of those worlds is constrained by the

nature of the tools. The world is never formless and void, but saturated with affordances and possibilities. The act is never protean, but always collaborative. All of the arts are conversations between artists and participants, mediated by tools and techniques. Virtual reality promises a special kind of conversation — the next logical step beyond participatory theatre or computer games — in which artists and participants share the role of creator.

There are two problems with the "empty space" view of virtual reality, and both of them have to do with autonomy. The first is that there is no known means for disgorging the contents of one's imagination without some sort of tools. Whether the tools are words, paintbrushes, direct-manipulation interfaces, or programming languages hardly matters. The point is that tools constrain what is possible, whether we like it or not. The second is that, regardless of the tools available, people are generally not very good at "making it all up from scratch". Human creativity works best when there are constraints — like the banks of a river — that can shape, channel, and suggest.

Both of these observations suggest that virtual worlds should, in some sense, be *designed*. By "designed" I mean that a world and the experiences that one can have in it are consciously shaped. The fact is that by their very nature virtual worlds are designed, whether we cop to it or not. The danger is that, by denying the presence of design, we design unconsciously, by default. By acknowledging design as a necessary element in the creation of virtual realities, we open ourselves to considerations of form, aesthetics, and art. At the very least, we must address ourselves to designing congenial tools for people who wish to create their own virtual worlds and experiences. At most, we must discover ways to design part or all of those worlds — including any "artificial" characters that may inhabit them — so as to enable people to have experiences that are powerful, interesting, and pleasurable.

DRAMA AS SELF-DISCOVERY

Each of us probably has a personal notion of what virtual reality can and should be like. For me, the closest thing is the experience of acting. I have been an actor for twenty-five years, and it is without a doubt the most resonant, rewarding, exciting activity I know of. Acting provides the opportunity to explore oneself, art, and the nature of existence from the perspectives of endlessly varied characters, situations, and worlds. It affords us the experience of contexts and issues that we cannot encounter in our everyday lives. When I play a role, I learn with my whole self — body, mind, and soul.

I suspect that one of the things that people object to in the context of VR is the notion that one must step into the shoes of another "character" (or a mold provided by the artist) to participate in a virtual world. This objection is founded upon the notion that the actor becomes the character. For me, and for most of the actors whose work I admire, the process is just the reverse: one discovers through the character a new version of oneself. This process of discovery and invention is made possible by the materials, form, and structure of the play. It is easy to think of the script as a straitjacket — after all, every word is written down in a conventional play. But actors soon discover that there is endless freedom between, among, and beyond the words as one brings the character to life.

What one gains from trying on the lives and traits of imaginary characters is what might be described as a cubist view of oneself. What I learned and experienced through Ophelia and Jenny Diver and even Little Mary Sunshine are things that my own life would never have been able to give me. What I yearn for is the chance to go a step beyond these experiences — in a medium where I can become an active co-creator, not only of the characters' thought processes and physical enactments, but also of their choices and actions within their "virtual" worlds. And I want everybody to be able to have such experiences.

THE NEXT STEPS

I believe that dramatic theory and technique can inform the design of VR experiences in ways that are much broader and more varied than the notion of "interactive drama" in any conventional sense. How do we do it? Well, that's a volume in itself, however. Suffice it to say that I believe we must include the following research topics in our continuing work on virtual reality:

Dramatic form, structure, and aesthetics. Both theatre and film are rich and largely unmined veins of useful theory and techniques. Joseph Bates' work at Carnegie Mellon University on a computational theory of drama and narrative is one of the few examples of ongoing work in this area.

Speech and natural language processing. NLP has fallen victim to the double bind of high expectations and slow growth, but it is nonetheless a necessary component of a truly robust VR system. Work in this area should be prioritized and supported by those academic, research, and commercial institutions which are serious about creating virtual reality systems.

Computer-based characters. Characters (or "agents") need not be complex models of human personality; indeed, dramatic characters are effective precisely because they are less complex and therefore more discursive and predictable than human beings.

VR is an incredibly exciting notion. For people who read science fiction, play computer games, or hang out in amusement parks, it promises to be the fulfillment of a pretty specific set of fantasies. For folks who haven't been part of the myth-hatching process all along, the possibility of VR is probably even more mind-blowing. And in the last year or two, press and pundits have both nurtured and fed on an image of VR in the popular imagination that promises the Ultimate Experience.

The problem, of course, is that if we don't deliver, and deliver soon, on all the implied and stated promises, VR runs the risk of falling into the same credibility, funding, and profile nightmare as AI — only much more quickly. A more sensible strategy is to back off from the hype and identify the key challenges that lie ahead on the road to VR, and then to plan our strategy for research and development so that each incremental step can be viable in its own right. Multimedia, interactive art, interface agents, and computer-based entertainment all provide excellent intermediate platforms for working on some of the central problems in VR.

In the last three years, VR researchers have achieved a quantum leap in the ability to provide sensory immersion. Now it is time to turn our attention to the emotional, cognitive, and aesthetic dimensions of human experience in virtual worlds.

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References:

Brook, Peter. The Empty Space. NY: Atheneum Publishers, 1968

Goldman, Michael. The Actor's Freedom: Toward a Theory of Drama. NY: The Viking Press, 1975

Laurel, Brenda, Abbe Don, & Tim Oren. "Issues in Multimedia Interface Design: Media Integration and Interface Agents". Proceedings of CHI '90, ACM, April 1990

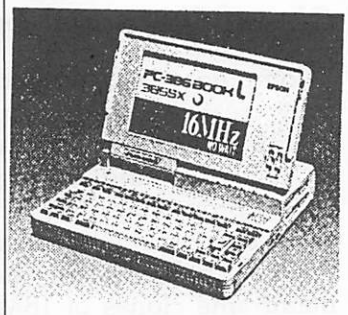
Laurel, Brenda. "Interface Agents: Metaphors with Character." In The Art of Human-Computer Interface Design, B. Laurel, ed. Reading, MA: Addison-Wesley Publishing Co., 1990

May, Rollo. The Courage to Create. NY: W.W. Norton and Co., 1975

Data Read Error

32-bit notebook PC

Seiko Epson Corp. is scheduled to start selling what is claimed to be the first 32-bit note-book type personal computer for ¥37,800 late next month.



The model is the first notebook-sized personal computer that can be used by three drives, the company said.

Loaded with two 3.5-inch floppy disc drives, it will cost ¥508,000 and has an optional 20MB hard disc pack.

Those optional floppy disk drives cost a mere ¥470,200. On a pro rata basis per megabyte, the hard disk pack would be priced at ¥3,265,278.

(From the Japan Times)

Looking For Standards

Roger Boisvert *continues the survey of the changing landscape of the PC market in Japan, which began last month with a look at the prospects for* J-DOS/V

It is important to have a basic understanding of the history of PCs in Japan before forecasting the implications of new hardware, new operating systems, software development and other issues. Because of this, most of this series discusses historical issues. Understanding of current problems and expected future events flow rather naturally from a good understanding of the history of the PC and its marketing in Japan.

Closed Shops and Incompatibility

Computer manufacturers in Japan have historically created closed, proprietary systems, much as IBM created proprietary mainframe systems 15 years ago and attempted to create a tightly closed proprietary bus structure for its PS/2 line of PCs. In mainframes, IBM is the leader, but Fujitsu and Hitachi have done well with mainframe clones of IBM systems. In the minicomputer market, often called "Offcon"s in Japan, NEC has created very tight proprietary systems, and managed the same feat in the PC world until about two years ago. At that time NEC controlled about 60% of the PC market in Japan, down from 80% only a couple of years earlier.

The Japanese PC market has had scant resemblance to the North American PC market. Although Microsoft's MS-DOS was (and is) the standard operating system, each PC producer proprietarized MS-DOS to such an extent that software produced for a Hitachi computer, for example, would not run on an NEC machine. Software produced for IBM Japanese PCs would not run on Ricoh machines. No software developed for machines capable of handling the Japanese language could run on North American DOS. It was not only MS-DOS which was proprietarized, but so too were other details such as screen density, screen mode, keyboards, and disk formats. Diskettes usable with a Hitachi PC could not be read in any machine but another Hitachi PC. NEC was the leader of the pack, as IBM was in North America. Here IBM was in the second or third position, depending on market sector.

The Scramble for Market Share

All this incompatibility brought some benefits and some severe problems. The aim of proprietary systems for computer producers was to lock in customers, once obtained. If you had a computer that could not exchange data with computers from other manufacturers, it would take a vastly better machine from a competitor to get you to switch. Each manufacturer, of course, felt it had produced the better mouse trap, and expected to take large portions of market share.

Only NEC was the winner in this game for several years, mostly because it was first on the scene with computers which met market needs. It is important to note that not only were operating systems proprietary, but so was the physical architecture of the PCs. NEC motherboards were quite different from Hitachi motherboards, which were different from everyone else's. This of course affected producers of add-in boards, necessary for peripheral products. Thus, the largest variety of peripheral products in Japan is for machines from companies with the largest market shares: NEC, plus IBM for large international corporations.

Over time this meant that, given NEC's solid market position, all software developers had to produce software first for NEC, then for Hitachi, Fujitsu, and IBM — roughly in that order depending on target markets. The result, of course, is that the vast majority of software available for PCs at that time was for NECs, with far fewer titles available for competing machines. There were roughly 8,500 PC software packages available for NEC PCs as of two years ago, and about half that amount for IBM, Hitachi and Fujitsu combined.

Starting about four years ago, NEC began losing market position to Fujitsu, Toshiba and IBM, especially in the large corporate market. NEC maintained a better hold on the market for small and mid-sized companies, and with home PC users.

The Development Merry-Go-Round

As competitors cut the market into smaller and smaller proprietary slices, software developers began to have greater difficulties producing good software for all the incompatible MS-DOS machines. Instead of improving their software, these companies spent most of their development manpower on porting software between incompatible hardware platforms. This meant that software development cycles, as between versions 1.0 and 2.0, were much longer than in North America. By the time the software developers finished one round of serving all the many major PC platforms, the PC producers had released new versions of their hardware, often incompatible in minor ways with their previous hardware, thus forcing software developers to go the rounds again adapting their by now very old software to these new hardware platforms. Development of off-the-shelf software in Japan was years behind North American development, and getting further behind.

There were exceptions of course. Many software developers produced only for the NEC, thus avoiding the pitfalls of trying to produce for many incompatible platforms. However, in doing so they forced themselves into a limited market. This meant that most software producers were very small, producing only a few small application packages, with very limited markets. Home PC users, however, were prolific purchasers of game software. Some game software developers thrived in the NEC market.

VARs Take Root in Japan

Besides game software developers, another group thrived because of the dearth of good application software caused by the absence of hardware standards. VARs (Value Added Resellers) and other custom software houses grew rapidly, and profited from the serious lack of good off-the-shelf software. As a result, today, you will find a very large number of VARs and custom software developers in Japan compared with the North American market. There are more than 4,500 companies in Japan classified as software houses, a majority of which are VARs or custom software developers. Most of these, of course, are very small, concentrating on very thin vertical markets. A few, however, have grown into very large companies.

Many user companies also developed a great deal of expertise in applications development, so much so that their capabilities became marketable externally. This happened also in North American companies, but there the activity was almost entirely within mainframe and large systems segments. In Japan this development occurred among PC-using companies as well. Eventually, as happened in North America, many of these companies spun off their systems development and applications development divisions into separate profit centers, producing valuable software for other companies, even competitors.

Grinding of the AX

The serious lack of off-the-shelf application software led users, software developers, and eventually even PC vendors and producers, to try to find some way to weaken the proprietary nature of PCs in Japan. The most successful PC producers had little incentive to open their architectures to competitors, as they were doing better on their own. The second tier companies remained committed to becoming first tier companies. But the third tier companies — those who had never developed any real presence in the PC market — finally banded together in an attempt to create a standard. As a result, seven companies created the AX standard and invited other companies to join them.

The promise of AX, if delivered, meant that a large number of software titles would become available for this new standard. Soon just over 150 companies joined the group. Most of these, of course, were software houses. The idea was fine, but the competitive nature of these seven companies soon led them back to proprietary features in order to differentiate themselves from their competitors. Many users, and software vendors especially, saw this and refused to invest, thus voting against this standard. It took about two years for AX group members to force each other back to the open standard. Many of the most successful software developers in Japan had said they would never produce for the AX machines. Last year we started to see those vendors finally releasing their software for AX.

Drive Standards Flipflop

Other moves toward standardization were also affecting the proprietary divisions in Japan's PC market. Floppy disk drives generally became standardized over this time period, though a few companies misread the future. The 5.25" floppy drive standardized on 1.2 MB and 720 KB formats, with some minor variations. Most machines could finally read data from other machines. The 3.5" floppy market standardized on 1.44 MB and 720 KB, again with some minor variations. Prior to the formation of the AX group, Toshiba created a truly bilingual PC, and fully controlled the laptop market for about two years before competitors started taking large shares from their laptop market. Toshiba, in its rush to get into the market had misread the future in one area. It had released its laptop computers with the new 3.5" drives before IBM. They guessed, incorrectly, that IBM would use 1.2 mb as the 3.5" standard, and decided to go that route themselves. Toshiba now is very slowly moving towards the new 3.5", 1.44 mb standard, but is having difficulty because it must continue to support its old standard.

D-ifferent O-perating S-ystems

As previously mentioned, MS-DOS was the standard, but as in the UNIX market in the US, there were many proprietary flavours. Though MS-DOS command structures in Japan were mostly similar, there was a great variety of minor but problematic differences. One example is that the boot drive on an NEC machine is always drive "A". On North American machines, drive "A" is always a floppy drive, and drive "C" is always a hard drive. Not so with Japanese language versions of NEC computers; the drive you boot the computer from is always drive "A". The lack of keyboard standardization also affects the operating system. A quick look at keyboards of several different manufacturers shows that not only is the placement of keys different, but also many, if not most, have keys that are proprietary to the manufacturer. This, in part, has led Microsoft and applications software producers to take a very modular approach to development.

Different keyboard and video drivers are required for each vendor's machines. Microsoft benefited from this in a way, and so did some "broad-based" software developers. They learned the importance — the necessity — of producing modular software. Microsoft learned this lesson well. Foreign application software developers benefited from this lesson when they came to Japan. They proved very successful against Japanese software developers. ASCII Corp. seems to have always understood this, but now other Japanese software companies have begun to apply this knowledge.

As with hardware, the need for standardization in operating systems (OS) has become painfully clear to PC producers. The adage that a computer is only as good as its software holds true today more than ever, as competition becomes increasingly fierce. PC producers understand the need to have a large variety of software titles available for their machines. The software needs to be adapted for each computer manufacturer, partially because of hardware differences, but mostly because of OS differences. If the OS is standardized, software should very easily be ported between incompatible hardware platforms, replacing only modules for each of the incompatible hardware manufacturer's differing keyboards, screens, and peripherals. This is in effect how UNIX is designed to handle different

types of peripherals. Change a hard drive, and change a device driver. Add an optical scanner, and you add another device driver to the OS.

Clearly, code portability of the OS is important, but even more important is code portability of applications software. This need generates most of the drive towards usage of portable code, such as that written in the C language. Japanese companies, even VARs and most major custom software houses, were still using Basic three to four years ago. They have mostly moved to C only over the last three years, well behind their North American competitors.

The incompatability between OS, and the clearly understood need for portable OS, portable code and modularity means that standardization in Japan is a considerably more important issue than in North America. This means that any OS which has a strong promise for portability and modularity will be much more important in Japan than in North America. There are three potential OS for PCs which can provide portability and modularity.

Dos/V Revives Hope...

Until last December I felt that it was pretty well too late for DOS to become that fully portable standard; however, IBM's DOS may turn out to be the best near-term solution available. *[See "The Corporate View" in the Feb. issue. Ed.]* DOS/V has the potential to be a second standard in Japan, next to NEC/MS-DOS. DOS is a single-user, single-tasking operating system. This will be all that many people want or need for at least the coming couple of years. However, as software develops, and users' needs grow, OS need to grow as well. A raft of new products and expanded needs show the need for multi-tasking operating systems in the future. DOS/V does have the opportunity to unite much of the Japanese DOS community, through creation of a new standard supported by several players in the PC industry, including IBM, AX producers, Toshiba, and foreign PC manufacturers. DOS/V has the modularity to provide for differing keyboards, and differing screen modes. DOS/V is potentially a standard for the coming two to three years. It is not, however, the standard of the future, one of multi-tasking OS and hardware.

...But Does Not Go Unchallenged

There are two other OS and one "OTHER" which clearly promise modularity, and multi-tasking: UNIX and OS/2, and the "OTHER", *Windows*.

Some, but not many, people need to use one of these OS today, but many will need them in the future as the necessity of multi-tasking grows. It is important to note that the percentage of installed machines in Japan today which can run either of these two OS or *Windows* is much lower than in North America. Most PCs installed today in Japan don't even have hard drives, let alone the RAM necessary for either of these OS. That means that OS/2 and UNIX are future standards, and can not become predominant standards for several years, though *Windows* has some potential in the near term. Yet, their promise of providing for portable software means they will become even more important in Japan than they will in North America.

And On the Horizon...??

As both OS/2 and UNIX promise modular portability, multi-tasking capabilities, and the ability to port application code easily, several questions will arise.

Which OS will garner major market share first in Japan?

Which OS will garner the largest market share in the near term, and over the long term?

What is near term and long term, ie: when?

[Insights into these and other mysteries will appear in subsequent episodes. Ed.]

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ILLUSTRATIONS	
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GAFFERS	Unavoidable Circumstances
DIALOGUE	The POLYGLOT BBS, 3:00 a.m.
LOTUS ALERT	E. Zawlocki, A. Whitman, M. Meyer, Compuserve⌂
BOOBOOS	The Japan Times, passim
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FORBEARANCE	Paterfamilias Cool

Ventura and PageMaker, GEM and Windows: A Symposium

Compiled by CC and annotated by DP from messages on the TPC and Polyglot BBSes

UPGRADING VENTURA

Steven M. Ayres: I received my upgrade to *Ventura Publisher* by air freight today. It CAN be done! I was assured by my accountant that mail-order goods are not taxable, so I was a bit surprised to see a bill from the shipper (Emery) for ¥2,900 (labeled "consumption tax") plus ¥300 ("handling"). On checking with the tax office, we found out that no, mail-order goods are not actually taxable, but some sort of administrative guidance went out and customs slaps a 3% surcharge on all incoming freight "to maintain balance." Questioned further, they said that "if foreign purchases weren't also taxed, everyone would be attracted to imports."!

(DP: the gist of several comments on the various BBSes about shipping to Japan was that Emery had a worse than average record for late delivery, foul-ups, and misplaced orders, DHL was below average, and UPS and FedEx did well. It was said that shipping via FedEx or similar generally avoided the 3% tax and customs clearance charges, unless you had a very large order or were just plain unlucky.)

Patrick Hochner: If the *Ventura* package was registered at an address in Japan, would that eliminate any possibility of upgrading? Could I simply send my original #2 disk to a friend in the States and ask him to ask for the upgrade? I would hate to send the floppy, only to learn later that the address doesn't match and therefore... I love the way we're left in the cold here! I didn't steal my *Ventura*; I paid good money for it, and refusing any support like this is a bit rude. Do they actually state somewhere in the .DOC that the program isn't distributed in Japan, and that therefore users there won't be supported (even though they PAID for the support)?

David Randall Bernat: Patrick, Xerox has a catch in their license that states that upgrades are at Xerox's sole discretion. This theoretically means that they could refuse to upgrade *Ventura* for anyone at any time, anywhere. Such a claim does tend to give Xerox a bit of a black eye, in my opinion. It does not mean that I will refuse to attempt to get an upgrade to *Ventura*. I have been trying to do so for at least two months. Promised letters have never been received.

Edward J. Zawlocki: As far as I know, being in Japan is not a problem for upgrading. I did it, although through a U.S. shipping address, for a Japanese registered address. Fax them at (619) 673-7586. If you are already registered you may not have to send them your #2 disk.

The cost to upgrade to *Ventura 3.0* (The GOLD Series) is as follows:

From *Ventura 1.0, 1.1, and 2.0* US$160
From *Ventura Professional Extension* $80
From *Ventura Network Server* $80

I believe this includes the shipping cost to a U.S. address only. Tax for certain states is also applicable. You must have registered the product and have to send them the original #2 disk. Six to eight weeks is the time specified for processing.

(DP: David Bernat sent in his registered copy of version 1.1 in early October. His check drawn on a US bank was cashed in early November, but to date Xerox does not know anything about his order. David Parry sent in his registered copy of version 2.0 at the very end of December and got the upgrade in mid-February. In both cases the software is registered at a Japanese address.)

Steven M. Ayres: *Ventura V.2.2* has enhancements that make it worth the $100 to upgrade, but the actual version change seems to be packaged as *Professional Extension*. When installed, this program replaced the *Ventura* overlay and program files. To my mind, this is a case of bait-and-switch: yes, the upgrade is only $100, but if

you want the new features, you'll have to put up another big chunk of change. On top of everything else, the packaging is cheap and cheesy: instead of a ring binder, now the manual and workbook are bound exactly like the ripoff Hong Kong manuals. And no case for the disks, just plastic bags.

(DP: very true. Version 3.0 looks like a repackaged version of version 2.0 together with the Professional Extension. *The upgrade price asked for the* Windows *version was $195, though.)*

VENTURA vs. PAGEMAKER

If you love to take up the cudgels on behalf of your word processor, then you will enjoy the fighting by the partisans of the two main desktop publishing programs for the IBM, PageMaker *and* Ventura Publisher. *It should be stated at the outset that a DTP program is essentially a formatting program that can integrate text and graphics, and thus is very different in approach from a word processor that has DTP-like capabilities.*

Chris Van Kirk: I respectfully disagree with the assertion that *Ventura,* when fully mastered, is faster than *PageMaker.* My experience has been that *Ventura*'s use of typewritten values for the various functions, and the inscrutable layering of the menus, makes its use laborious in the extreme.

David Parry: The comparison should be made according to length of file. Also, according to the amount of EMS memory you have. Not sure what happens under *Windows 3.0* in such a case, as I don't have *PageMaker* and am at the back of the waiting list for *Ventura 3.0,* whether *Windows* or *GEM.* I got an upgrade to *PerFORM* for the version that runs under *Windows 3.0.* The manual said something to the effect that the speed of *PerFORM* was determined by the settings in *Windows.* As I recall, it would not run in enhanced mode, manual to the contrary, and in other modes it was slow. Like using an XT, in fact. I went back to the older version of *PerFORM* that runs under *GEM* and is a bit slow at times, but it was still two to three times faster than *Windows.* One of these days I'll figure out what was wrong. On the basis of that, I am looking forward to *Ventura* for *Windows.*

(DP: the numeric approach offers greater precision but can be highly confusing. The same comment is made in the Mac world over Quark Express *as opposed to* PageMaker.*)*

Edward J. Zawlocki: *PerFORM* doesn't work in Enhanced mode? On my system it does, however, it doesn't go any faster.

Chris Van Kirk: Sorry to say it, but my experiences in running *Ventura* are particularly awful. If you still have any choice in the matter, go with another software. Any software will do. My version of *Ventura* (non-*Windows*) has so many bugs that it could feed a mountain of frogs. Occasionally, and without warning, it slightly skews text. It is patently incapable of producing a 17 pica frame, but will readily do the cm equivalent. etc. Once again, go for something else. Anything else!

David Parry: Anything else? Which version do you have? Yes, it has bugs (I speak of version 2.0 plus the *Professional Extension*), but *PageMaker* seems to have an awful lot of limitations too.

Martin Bruczkowski: David, let me challenge you: make and print a page in *Ventura,* and I'll make an identical thing in *PageMaker.* I'd be very interested to see if there are any things I'd be unable to reproduce. The major difference between the packages is that it will take me five times more steps than you'll need to do any medium-complex page. *PageMaker* has fewer tools and options, which makes it much easier to learn, but it takes longer to create exactly what you want. I used to teach *PM* at Linc and my manager gave me several sample pages printed in *VP.* I made identical ones in *PM,* and he couldn't tell the difference.

David Parry : The challenge is irrelevant, Martin. With the same fonts (e.g. *PostScript*), the results would be identical unless the width tables varied. In other words, you should be able to produce the same page with any program, and any differences may be due to other factors. For example, *WordPerfect* TMS text looks a bit looser than *Ventura,* due to *WP*'s default spacing options, but it is still very nice. The real question is which one is better suited for the job. I stand by my assertion that in most cases *PM* is better for short jobs and *VP* gets better the longer the text. Both programs are good, which is why I do not agree with the original comment that started this whole thing. DTP in general takes a lot of time and effort to master, regardless of the program.

(DP: PageMaker *is the darling of the advertising world, but nearly always on the Mac. Does that give the victory to* Ventura *in the IBM world or does that just leave it cold?)*

Martin Bruczkowski: I had a chance to play with *Ventura* for *Windows 3.0*. It feels just like the *GEM* version, with minor improvements (e.g. you can place the TAG box and the box with loaded TEXTS anywhere on the screen). The use of the *Windows* clipboard is also very useful. The installation is a snap: the entire programme comes on two disks, and you install it from within *Windows*. If it only weren't so incredibly expensive! (about $900, I think). I guess I'll wait for the next release of *PageMaker*.

Andreas Braem: Just borrowed a copy of *Windows 3.0*. From what I have heard concerning speed, I shall probably continue to run *Ventura* with its *GEM* version. Still, wanted to have a look at *Windows*. Can't get it to run though. The screen stops at the Microsoft initial screen and the drive makes faint slow sounds. Suspecting the *Smartdrive* cache program (HD caches don't work with my sector-translating ESDI drive), I took that cache's driver line out of CONFIG.SYS — to no avail. Maybe I should just go back to bed...

Martin Bruczkowski: Reinstall your *Windows*! I know it's a bother, but it almost always fixes problems like yours, Andreas.

David Randall Bernat: Andreas, you may be having problems with management of memory in your computer with *Windows 3.0* trying to do it one way and the prior memory manager trying to do it another way.

(DP: all the memory managers conflict with each other, so you can only use one of them. The last press release from Qualitas stated that a future version of 386 to the Max *would be compatible with* Windows 3.0 *in all modes and could replace HIMEM.SYS, just as it could in older versions of* Windows. *The updated version is still coming "real soon now".)*

Andreas Braem: After a third try, still no success at installing *Windows*. It simply won't load. I have heaps of memory and no problems during setup and installation. Guess it's that ESDI drive's sector translation... What the hell do I need *Windows* for anyway? *Ventura* will be all right under *GEM*. (Sigh... The setup screen, with the Sigma screen driver helping it along at 1660x1200 pixels, looked so good...)

David Randall Bernat: Andreas, Roger Boisvert suggested to me that I remove the memory driver in CONFIG.SYS and let *Windows* attempt to install its own memory driver. This could be your problem — conflicts of memory drivers.

David Parry: I have to reboot with different setup files for *Windows* because I use *386 to the Max*. I can still use *Scanning Gallery* (real mode only), but not *Excel* or *Omnipage*. *Windows* programs take a long time to load, whereas programs under *GEM* (*VP 2.0* and *PerFORM*) loaded about twice as quickly when using LOADHIGH in *386 to the Max*. I tried *PerFORM* for *Windows*, and it was unbelievably slow. Caching? I use *Super PCKwik*, except with *Windows*, and *Windows* has *SmartDrive* installed. I will try *VP 3.0* for *Windows*, and hope it runs at least as fast as the *GEM* version. I tested *VP 3.0* for *GEM* on a second machine, and it looks OK. I am not a *Windows* enthusiast, but I suppose it will become the standard. I don't understand Martin's rabid enthusiasm, to put it mildly. Both *GEM* and *Windows* are highly sensitive to the machine configuration, I have found, and need a lot of setting up. It could well be that your ESDI controller cannot work with *Windows*, Andreas.

Martin Bruczkowski: Not for long, David, will you have to reboot between *Windows* and *GEM* sessions. Not only will the new version of *QEMM* solve that, I hear *DOS 5.0* looks VERY nice. It has support for high memory; but I wonder if, for example, it'll let you put the device drivers of your choice into high memory.

(DP: all the memory managers work with Windows *in real mode, which is equivalent to the old versions of* Windows, *so there is no need to reboot until you want the full advantages of the new and shinier* Windows.*)*

Mary-Jane Liddicoat: Is there any way for me to use a Mac *PageMaker* file on an IBM *PageMaker* program? I have heard about a SYLK file that can be used to transfer files from a Mac database to an IBM MicroSoft *Excel* program. Can a similar procedure be used? Do let me know if this transfer of *PageMaker* files is possible OR NOT. Am most grateful. Thank you.

Edward J. Zawlocki: As far as I know, the two (IBM and Mac) are compatible. You should be able to just transfer them over a modem or, if one of the systems can read the other's disk, to do it that way. *PageMaker* can NOT be identical on the two computers — however, file compatibility is what you probably mean anyway.

BOOK REVIEW

by Terry Dean Ragan

The PC User's Survival Guide

By Jim Aspinwall, Rory Burke, and Mike Todd

M&T Books, a Division of M&T Publishing Co., Redwood City, CA,
1989: 414 pages, 10 Appendices, Index Price: US$22.95
(probably at least half as much again in Japan)

It takes a computer user — any computer user — about as long as it takes to turn on the switch of a brand-new computer to find out that he is way out of his league. It's one thing to have the machine; it's quite another to make it work from scratch, and that's where we all start.

With their more complex memory configurations and peripheral devices, working with the more powerful personal computers is of the same magnitude as the difference between driving a Volkswagen and driving a Lamborghini: you gotta learn to drive all over again. To be sure, I'll wager there are very few who are reading this review right now who haven't read Peter Norton's seminal book on DOS — the perfect primer for a very difficult operating system, and an absolute MUST on every PC user's bookshelf. Wouldn't it be nice if there were a companion book — a work that stands above all the rest — that explains SYSTEMS?

The PC User's Survival Guide comes closest to being that one volume that has something for everyone — amateur or expert — when it comes to understanding and fine-tuning the PC. The language is down-to-earth, the instructions clear and easy to follow. If you are one of those hardheads (like me), who prefer to learn it "my way," you will be pleasantly surprised at all the time you could have saved had you just pored over a few paragraphs in the appropriate chapters.

The first seven chapters constitute Section I, titled *Problem Solving*. By the time you get through the second chapter (it's not 25 pages long), you're already learning about computer addresses and their importance. Everything you ever thought was possible to learn about disk drives is here too, including testing, low-level formatting, adjusting interleave, and maintaining your hard drive. Chapter 7, "Computer Operations," talks about the use of memory (including expanded memory), ports, pointing devices, video devices, and specialty cards. **Section 2** is a kind of advanced seminar course titled ***Preventative Measures and Practices.*** This section comprises the final seven chapters: *Computer Management, System Installations, Software Protection, On-Line Practices, Anti-Virus Practices* (an extremely important chapter for those of us who spend a lot of time downloading files from a bulletin board system), *Public-Domain and User-Supported Software,* and *Technical Support.* In my opinion, Section 2 alone is worth the cover price AND the additional cost of buying it in Japan.

The appendices also are good, especially Appendix B, the literature reference, and Appendix J on technical tips. So also are the other appendices on software, user groups (all in the U.S.), ASCII charts, keyboard codes, disk drive tables, error listings, color chart, and video modes.

You'll collect an awful lot of books on personal computing before you'll find all the excellent material covered in *The PC User's Survival Guide.* My advice is to read it from cover to cover, lightly scanning what you already know, digging into what you need to know. I found the best explanations to be on devices and addresses. And the authors offer plenty of help when something inevitably goes wrong. In short, adding this text to your reference shelf is money well spent.

-TDR

March Meeting

One of the most popular meeting types of the past has been when people bring along their favourite software and tell us all about it. Next month will be different! The next TPC meeting will feature a Hardware "Show and Tell"!

So if you have just bought a great new board or add-on, give me a call, the number is in the front of the magazine. The same goes if you have bought a real dog of a product, this is your chance to warn the audience. The format will be interview style, with a 5–10 minute long talk by each person to answer the following:

What have you got?
What does it do?
Where did you get it?
Was it a good deal?
Do you reccomend it?

Don't worry if you can't remove it, just bring yourself and tell us all about it. So look forward to tales of woe or good tips on what to splash out on.

Stuart Woodward

From Beneath the Green Visor

Opinions expressed in Symposia contained in the preceding newsletter do not necessarily reflect the views of their sympositors, nor of the Dept. of Defense, but should be construed as bleeding chunks torn from the living corpus of opinion on our Tokyo BBS Network.

For the purposes of our April Issue, we are considering the spirit of April First to characterize the month. All are invited to submit articles appropriate to the unrealistic occasion. Vapourware reviews are particularly required, as well as graphics.

Readers' opinions are sought on the desirability of the Newsletter's accepting commercial advertisements. Discussion of the issue is encouraged on the BBS, and plans are afoot to begin with free classified advertisements for members or subscribers. Any opinions?

-CC

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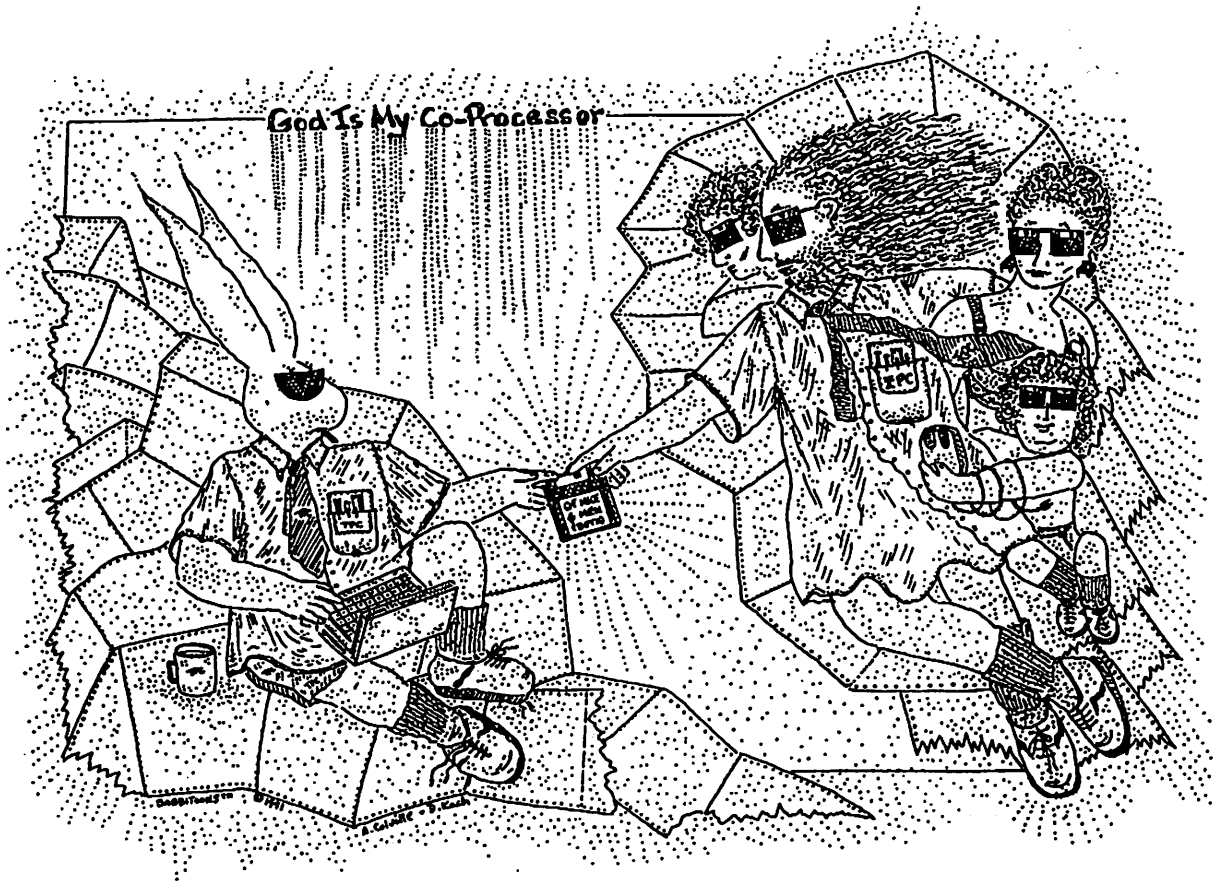
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